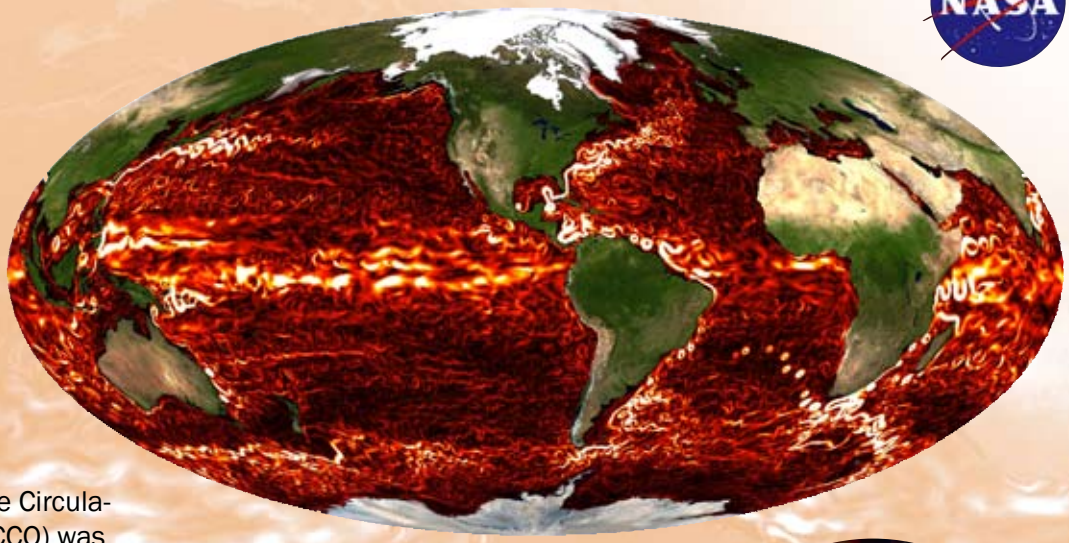
ECCO

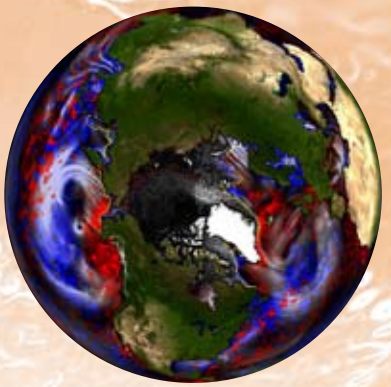


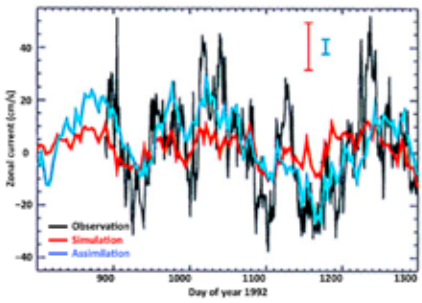
OVERVIEW

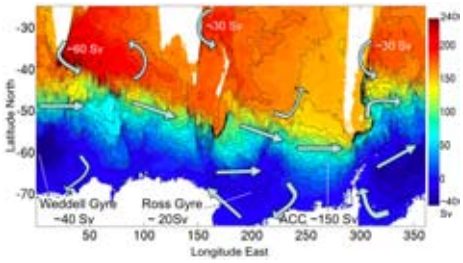
The Consortium for Estimating the Circulation and Climate of the Ocean (ECCO) was established in 1998 with the goal of producing quantitative depictions of the time-evolving global ocean state by combining diverse observations of the ocean using general circulation models.
Such combination, also known as data assimilation, is important because available remotely-sensed and in-situ observations are sparse and incomplete compared to the scales and properties of ocean circulation. In contrast to numerical weather prediction that also combines models and data, ECCO estimates are physically consistent, that is, they do not contain discontinuities when and where data are ingested.

ECCO's efforts toward this goal now include several products that provide significant scientific contributions and that support various national and international programs including the Climate Variability and Predictability (CLIVAR) program and the Global Ocean Data Assimilation Experiment (GODAE).

The products, available to the wide scientific community, are suitable for studying mechanisms of ocean circulation, climate variability and its prediction, biogeochemical and geodetic processes, etc. The products include a near real-time analysis of global ocean circulation, a retrospective analysis combining nearly all extant observations of the ocean, and an ocean and sea-ice analysis at resolutions that start to resolve ocean eddies and other narrow current systems.







FACTS

- Established in 1998 under the U.S. National Oceanographic Partnership Program (NOPP) with support from NASA, NOAA, and ONR, with complementary grants from NASA and NSF.
- ECCO produces quantitative depictions of the global ocean by combining diverse observations using general circulation models.
- Products are suitable for studying mechanisms of ocean circulation and climate variability.
- Estimates employ diverse remote-sensing (e.g., TOPEX/Poseidon, Jason-1) and in situ (e.g., Argo, XBTs) measurements of the ocean.
- Develops and employs advanced modeling and data assimilation tools (MITgcm and its adjoint, Kalman filters and related smoothers, Green's functions).

http://www.ecco-group.org